

WHAT IS CLAIMED IS:

1. An electric power steering apparatus for applying an assisting steering force to a steering mechanism of a vehicle by driving an electric motor according to a

5 steering operation performed by a steering unit for

steering the vehicle, comprising:

an electric current command value calculation unit

which calculates an electric current command value by

correcting a target value of an electric current to be

10 made to flow in the electric motor;

a drive control unit which controls the drive of the

electric motor so that an electric current of the electric

current command value flows in the electric motor; and

a convergence control unit which determines a damping

15 compensation value; which is a correction value of the

target value to be corrected by the electric current.

command value calculation unit, so that a quantity of

steering operation performed by the steering unit is

converged to a neutral point, the convergence control unit

20 including:

a compensation electric current setting unit

which determines a basic damping compensation electric

current value corresponding to the correction value of the

target value based on a steering speed which is a changing

speed of the quantity of the steering operation and a vehicle speed, and

a compensation electric current adjusting unit

which adjusts the basic damping compensation electric

current value based on the steering torque given to the

steering unit and the quantity of the steering operation;

thereby calculating the damping compensation value.

12. The electric power steering apparatus according to claim 1,

wherein the compensation electric current adjusting unit

adjusts the basic damping compensation electric current

value so that the damping compensation value is

increased when the quantity of steering operation

increases more than the neutral point and then decreases

in a predetermined period of time and the steering torque

is not higher than a predetermined value.

13. The electric power steering apparatus according to

claim 2, wherein the compensation electric current

adjusting unit including:

a gain deciding unit which decides a gain with

respect to the basic damping compensation electric current

value based on the quantity of operation and the steering

torque, and

a multiplication unit which multiplies the basic  
damping compensation electric current value by the gain,

thereby calculating the damping compensation value, and

wherein the gain deciding unit increases the gain

when the quantity of operation increases more than the

neutral point and decreases in a predetermined period of

time and the steering torque is not higher than a

predetermined value.